

650V 40A Trench and Field Stop IGBT

JJT40N65SE

Key Features:

- $V_{CE}=650V$
- $I_C=40A@T_C=100^{\circ}C$
- $V_{CE(sat)}=1.7V$

TO-247

Features:

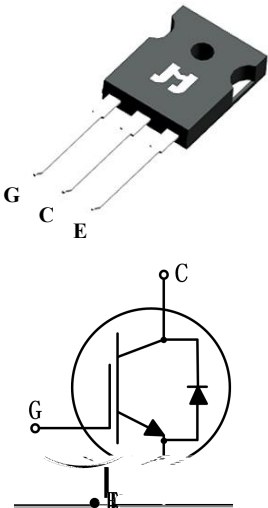
- Trench - IGBT
- $P_{tot} < V_{CE(sat)}$
- $F_{max} > 100kHz$
- 8 pins

Benefits:

- High efficiency
- High power
- Rugged HS

Applications:

- Motor



Pin

T	M	P	P	M
JJT40N65SE	T4065SE	TO-247	T	



M

	P		
CES	C -	650	V
GES	G -	20	V
C	C (c=25)	80	A
	C (c=100)	40	A
CM	P ,	160	A
F	D (c=100)	40	A
FM	D ,	160	A
	S	8	μ
	P (c=25)	300	
	P (c=100)	150	
	O	-40 +175	
	S	-55 +150	

	P			
		.	M .	
(-)	T , IGBT	-	0.5	K/
(-)	T , D	-	0.9	K/
(-)	T ,	-	40	K/



ESIGB (=25)

	P					
			M .	.	M .	
CES	C -	$V_{GE}=0V, I_C=250\mu A$	650	-	-	V
CES	C -	$V_{CE}=650V, V_{GE}=0V$	-	-	50	μA
GES	G ,	$V_{GE}=20V, V_{CE}=0V$	-	-	100	A
	G ,	$V_{GE}=-20V, V_{CE}=0V$	-	-	-100	A
GE()	G -	$V_{GE}=V_{CE}, I_C=1mA$	5.2	5.7	6.2	V
CE()	C -	$V_{GE}=15V, I_C=40A$	-	1.7	-	V
		$V_{GE}=15V, I_C=40A, \theta_J=175$	-	2.2	-	V

D

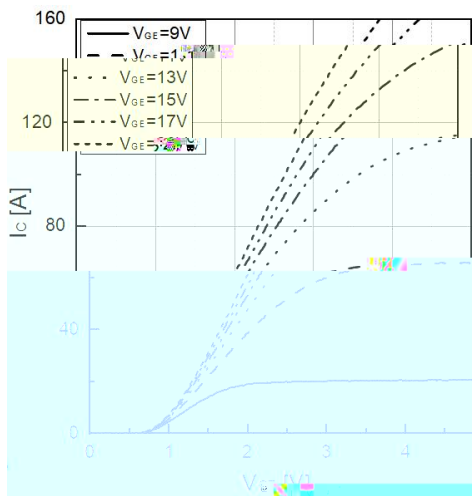
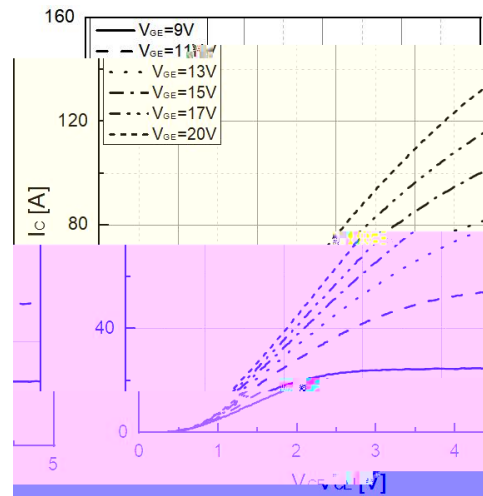
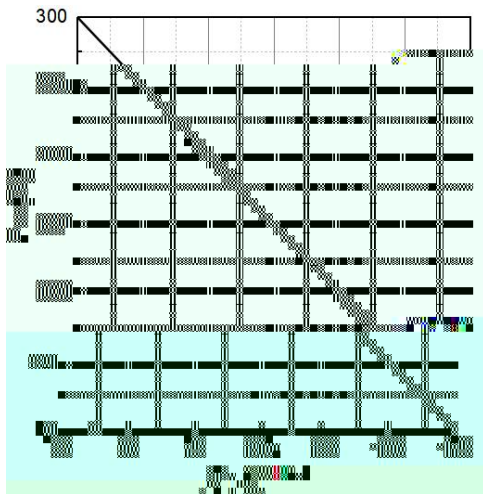
	P					
			M .	.	M .	
	I	$V_{CE}=30V$ $V_{GE}=0V$ $f=1MHz$	-	1844	-	F
	O		-	100	-	F
	R		-	27	-	F
	T	$V_{CC}=520V$ $V_{GE}=15V$ $I_C=40A$	-	125	-	C



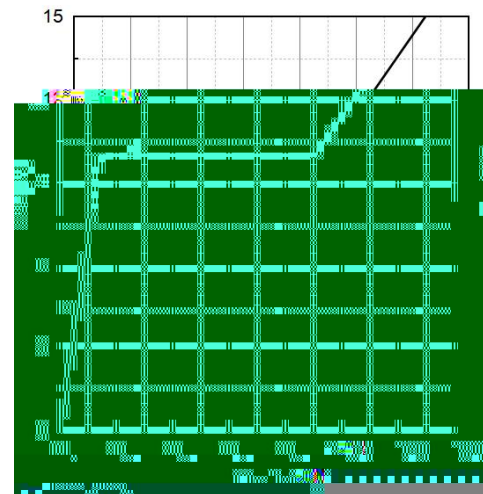
S

	P					
			M .	.	M .	
()	T -	$C_C=400V$ $G_E=0/15V$ $C=40A$ $G=10\Omega$ I	-	25	-	
	R		-	77	-	
()	T -		-	162	-	
	F		-	64	-	
	T -		-	1.8	-	J
	T -		-	0.9	-	J
	T		-	2.7	-	J
()	T -	$C_C=400V$ $G_E=0/15V$ $C=40A$ $G=10\Omega$ I =175	-	25	-	
	R		-	79	-	
()	T -		-	187	-	
	F		-	107	-	
	T -		-	1.9	-	J
	T -		-	1.2	-	J
	T		-	3.1	-	J

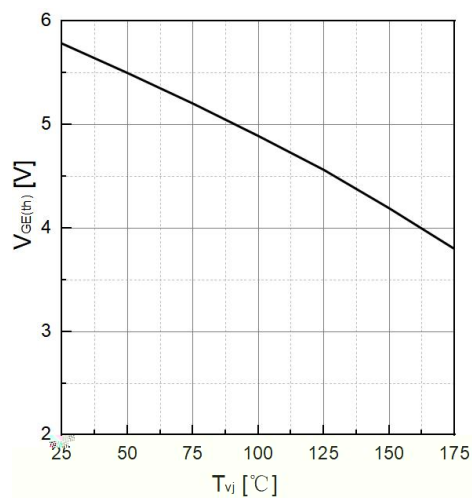
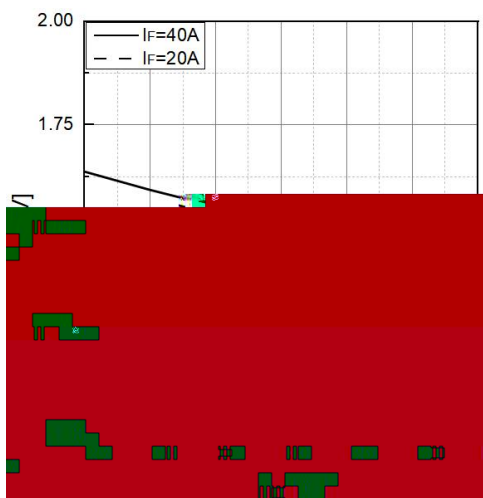



F 1. T ($T_{vj} = 25^\circ\text{C}$)

F 2. T ($T_{vj} = 175^\circ\text{C}$)


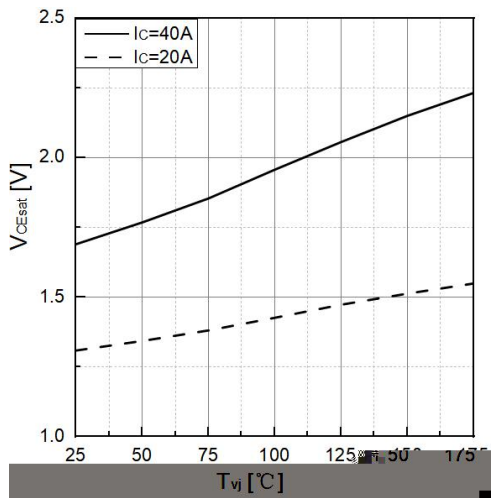
F 3. P



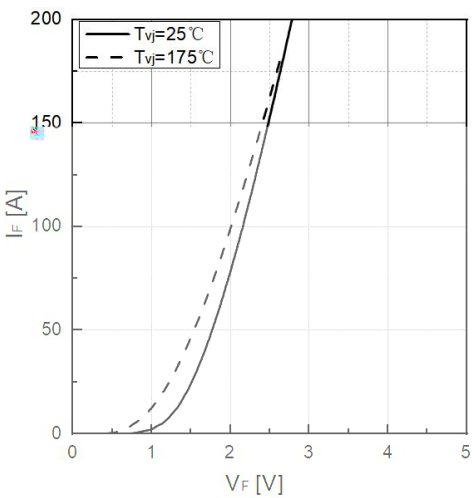
F 4. T G


F 5. T $V_{GS(th)}$ ($I_D = 1\text{ A}$)


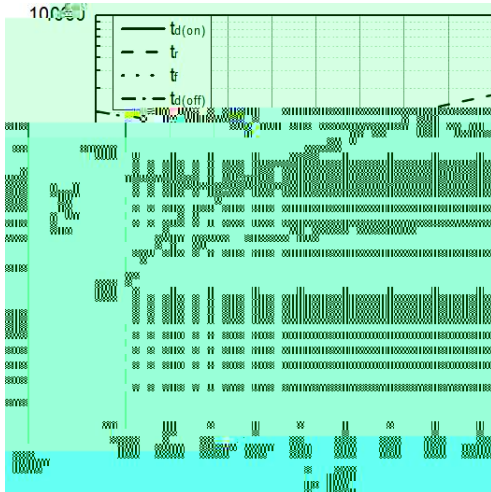
F 6. T F



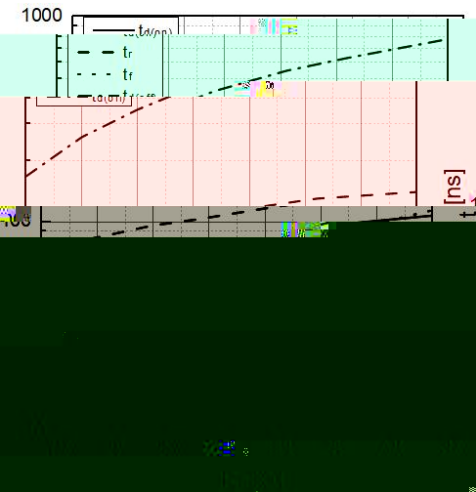
F 7. T CE



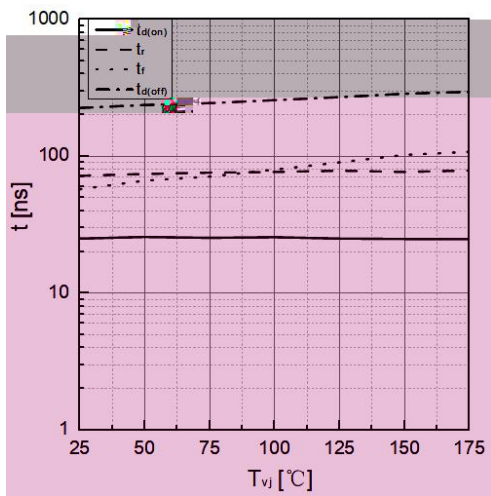
F 8. T F F



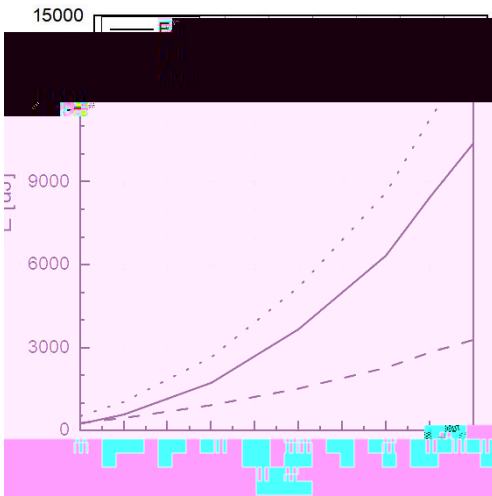
F 9. T C



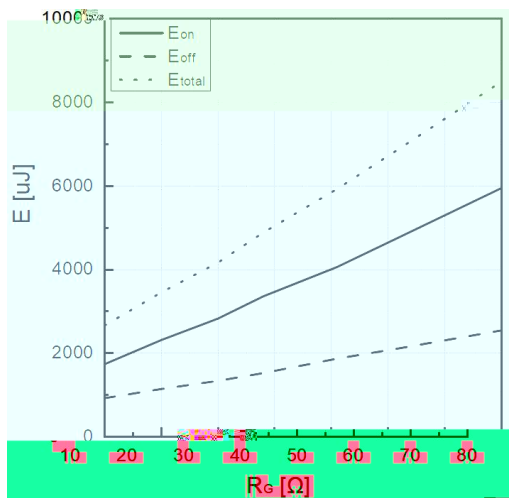
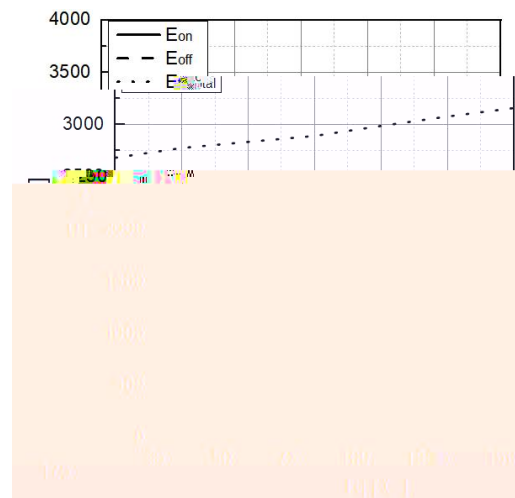
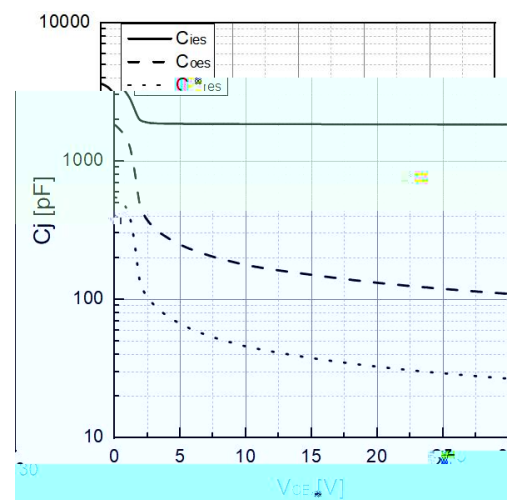
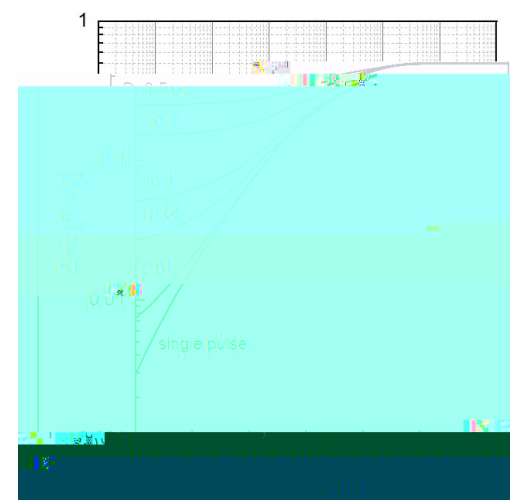
F 10. T G



F 11. T

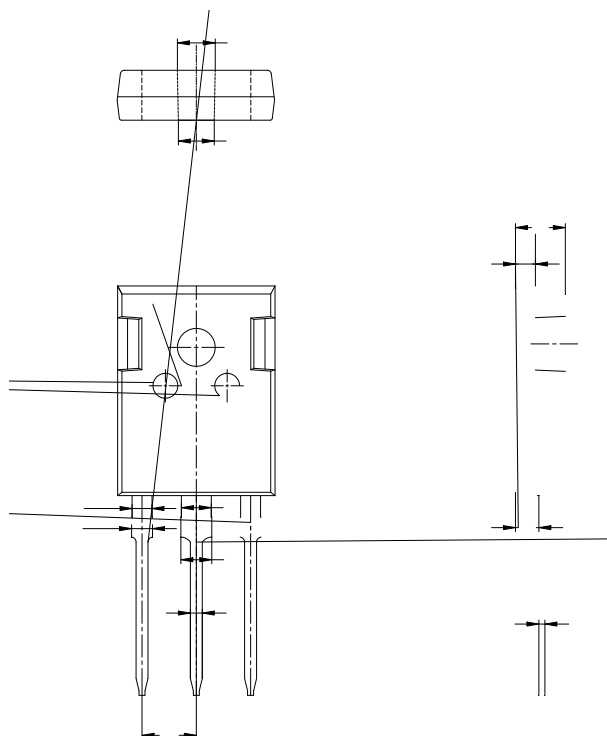


F 12. T C


F 13. T

F 14. T

F 15. T
CE
($=1M$, $G_E=0V$)

F 16. T
IGBT

P

TO-247



R .	D					
	M			I		
	M .	T .	M .	M .	T .	M .
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	21.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G	5.25	-	5.65	0.207	-	0.222
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031
M	2.80	3.00	3.20	0.110	0.118	0.126
N	2.90	3.10	3.30	0.114	0.122	0.130



D	R	C
2025-05-05	R 1.0	P R
2025-11-30	R 1.1	R C
2026-06-25	R 1.2	U

D

PLEASE NOTE - J J J M C ., L ("JJM") , ,
/ . I
 , . T
JJM JJM'
JJM'
. P JJM
 , JJM' . A JJM
. T JJM
J J J M C ., L . T
. 2025 JJM - A